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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,599	10/20/2003	Michio Horiuchi	300.1135	2549

21171 7590 08/14/2006

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WASHINGTON, DC 20005

EXAMINER
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BELL, BRUCE F

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 08/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/687,599

**Applicant(s)**

HORIUCHI ET AL.

**Examiner**

Bruce F. Bell

**Art Unit**

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/20/03; 5/10/05</u> | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 3-7 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 3-7 do not further limit the fuel cell structure. The recitation with respect to what side the flame is on is not commensurate in scope with claim 1 as set forth, since the fuel cell is claimed, not the fuel cell assembly, including any kind of fuel source and in fact the claim states "when" the solid oxide type fuel cell element is arranged in a flame, which indicates that the flame may or may not be present. Further, the dependent limitations with respect to the oxidant being blown to the cathode or that the cathode is arranged to be exposed to the oxidant is not considered to be a structural feature of the fuel cell but rather a means to get the oxidant to the fuel cell and is done by passages or pathways leading to the fuel cell and may be connected to a housing containing a fuel cell or can be connected through conduits or the like, but are not part of the fuel cell per se, but may be a part of a fuel cell assembly. The dependent limitations with respect to how the flame is generated or premixed is also not a structural attribute of the fuel cell and therefore does not limit the apparatus structure.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Goodenough et al (6004688).

Goodenough et al disclose a perovskite lanthanum gallate electrolyte doped with strontium and magnesium and a solid oxide fuel cell incorporating a doped lanthanum gallate electrolyte with a cathode on one side, an anode on the other side and a buffer layer of a mixed electronic and oxide-ion conductor between the anode and the cathode and the electrolyte to block unwanted chemical reactions while permitting electronic and oxide-ion transport. See abstract. The cathode is made of LSCO and the anode is made of either LSGM/NiO or Ceria/NiO to yield porous anodes. The electrodes are fabricated on the top and bottom of an LSGM electrolyte and Pt meshes with Pt leads and an electrode paste to achieve good contact are fixed on top of each electrode to act as current collectors. See col. 3, lines 30-48. The cells were tested by placing them in the hot zone of a vertical furnace, where it is shown that the invention gave improved performances.

The prior art of Goodenough et al anticipates the applicant's instant invention as set forth above with respect to the instant claims. Even though the prior art of

Goodenough et al does not disclose that the electrolyte porosity is not less than 10%, it appears that this property is inherent in the materials, since the prior art device utilizes the same materials as are used in the instant invention. Goodenough et al also performs tests in a vertical furnace which would yield the same results as using a flame, absent evidence to the contrary. The Goodenough et al patent further discloses the use of the same Pt mesh being fixed to the anode and cathode layers, and therefore, would have the same effect on the solid oxide fuel cell as that in the instant invention.

Therefore, the prior art of Goodenough et al anticipates the applicants instant invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296.


The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BFB  
July 28, 2006

  
Bruce F. Bell  
Primary Examiner  
Art Unit 1746